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**Title:**

The subprime crisis and its consequences

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The structure of regulation: Lessons from the crisis of 2007

**Abstract:**

Having started by describing the background to the crisis, the paper considers priorities for action by the financial industry, being: (1) Improved transparency; (2) Review valuation issues, notably the distinctions between IFRS and US GAAP on asset reclassification; (3) Better risk management, with an appropriate mix of quantitative and qualitative metrics; (4) Improved market infrastructure, perhaps including a central counterparty for OTC derivatives; (5) An external review of ratings agencies' processes; (6) Enhanced liquidity risk management. An assessment of the measures taken by central banks to allay the crisis follows, and we conclude with an analysis of the strategic consequences for the financial industry.

**Classification Codes:**

G14, G28, G32, G38, M48

**Key Words:**

transparency; risk management; liquidity; valuation of complex financial products; original and distribute model

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The ongoing crisis in the global financial markets, which originated in the US subprime mortgage segment and quickly spread into other market segments and countries, is already seen today as one of the biggest financial crises in history. Although the impact of the crisis on the real economy has been moderate so far, it has brought some major financial institutions to the brink of collapse, which meant they had to be rescued, while others have been forced to raise fresh capital from existing and new shareholders. Given the size of the dislocations in the financial markets, it is more than justified and indeed warranted that a meticulous discussion be carried out concerning the origins of the crisis and, based on this, that consequences be drawn, in order to strengthen the stability of individual institutions as well as that of the financial system as a whole.

### **Background to the crisis**

The current market turbulence, it is useful to recall, was preceded by a period of unusually benign macroeconomic conditions marked by strong growth and low inflation. This translated in equally benign conditions for the global banking system, with low default rates, high profitability, strong capital ratios, rapid growth in business volumes and strong innovations. While these factors combined meant that the global banking system had entered the crisis in a position of unusual strength, the favourable environment may also have contributed to the crisis in that it led to overconfidence and dulled the risk consciousness on the part of at least some actors.

Underlying the subprime crisis were essentially two interrelated factors: on the one hand, the boom in US real estate markets, and on the other hand, the high liquidity in the global financial markets. The latter was, in turn, fuelled by the significant easing of US monetary policy over an extended period of time and by the additional boost to global liquidity as many emerging markets had tied their exchange rates to the US dollar and therefore had to match the expansive US monetary policy.

The price increases in the US real estate markets were partly justified given the demographic developments in the US. But they were certainly fuelled by the accommodative monetary policy environment. At the same time, the boom in the US housing markets would not have been possible had it not been facilitated by innovations in mortgage financing. One of these innovations was the emergence of the subprime mortgage segment, whose share in total new business rose from 6% in 2001 to 15% in 2006. These products allowed borrowers with impaired credit histories and low incomes to buy property, too. Towards the end of the lending boom, however, credit standards deteriorated further with the emergence of teaser rates, “stated income” loans (low documentation loans where mortgage brokers and borrowers simply stated the borrower’s income) as well as “ninja” loans (for borrowers with “no income, no job and no assets”). Nonetheless, many lenders continued to lend even to such borrowers based on the assumption that house prices would keep rising. In a scenario of rising house prices, the potential default of a financially weak borrower would have a comparatively small impact on the lender, as the collateral would have increased in value in the meantime.

The growth in innovative financing forms would have been impossible, though, without investors’ strong demand for high-margin, higher-risk assets. In times of low nominal interest rates and high competition, asset managers and banks were “searching for yield” and risk spreads were increasingly compressed. While this yield compression was partly justified in light of strong global growth and default rates, which touched historical lows, irrational exaggerations occurred over the course of 2006 and spring 2007, so that risk spreads no longer covered the underlying risk. Product structures, especially those for mortgage-backed

securitisations, became increasingly complex. Incidentally, a similar development could be observed in the market for leveraged loans and the securitisations based on them. Here, too, margins eroded and credit standards weakened, leading to the notorious “cov light” and PIK (payment in kind) loans. As a consequence, more and more banks were in the business of buying risk. However, some assumed risks beyond their expertise and capital base and found themselves in an unsustainable position once investors’ appetite for risk diminished.

What triggered the end of the boom was the reversal in the monetary policy course of the Federal Reserve as it gradually raised interest rates, starting in mid-2004 from 1% to 5.25%. This stopped the rise in house prices and set off the upward shifts in adjustable rate mortgages, reducing the disposable income of the consumers involved. Default rates, especially in the subprime segments, started to rise beginning in 2006, but this did not translate into mounting risk spreads and default rates until well into 2007, possibly reflecting information asymmetries.

Many people and institutions had in fact warned about an impending cooling of the US housing markets, and numerous market participants had already adjusted their strategies accordingly. What surprised many market participants, though, was how quickly, how comprehensively and how vigorously the crisis spread to other market segments and other countries. In particular, the unprecedented drying up of the money markets caused disruptions that had been unimaginable and therefore had not been factored into risk models.

In a way, though, the spreading of the crisis can be traced back to two rather familiar trends: globalisation and securitisation. Repackaged as asset-backed securities, the risks from US mortgage loans were distributed around the globe – which, on the one hand, is a welcome spreading of risk, but on the other hand, spreads the impact of the crisis as well. Furthermore, to the extent that the distribution of risk is unknown, this produces additional uncertainty. As a result, while the crisis was initially limited to the US subprime segment and US mortgage financiers, it quickly spread to other institutions around the world that had invested in these securities. The fact that the losses popped up in unexpected places created, in combination with the uncertainty concerning potential further losses, a crisis of confidence. As a result, the interbank markets dried up. Securitisation and syndication markets followed, forcing banks to keep assets on their balance sheets for longer than originally intended, which in turn placed added stress on capital ratios. Similarly, off-balance sheet investment vehicles, refinanced in the commercial paper market, and other conduits for which banks had provided contingent credit lines created further pressure on banks’ liquidity and capital needs. The market for asset-backed commercial paper, through which most of these off-balance vehicles were funded, collapsed from USD 1,200 billion outstanding to about two-thirds of that in the summer of 2007. Finally, as banks tried to raise liquidity by selling sound assets, an additional channel for contagion was opened, spreading the crisis to market segments such as stocks and investment grade corporate bonds that originally had been unaffected.

### **Measures taken by the private sector**

Based on the analysis of what went wrong, the areas in which improvements were needed became rather obvious soon after the outbreak of the crisis. Responding to the weaknesses revealed by the crisis, banks have – individually and collectively – started to find remedies. Collective action is coordinated primarily by the Institute of International Finance (IIF), which presented an interim report in April 2008 and a final set of principles and recommendations in July 2008.

Specifically, banks have identified the following areas as priorities for action:

### *Transparency*

As counterparties, depositors and investors became reluctant to extend funding at the height of the crisis due to the uncertainty concerning the risk banks were exposed to, banks had a huge incentive to enhance the transparency on the risk they held, including contingent and off-balance-sheet exposures. The fact that many banks have brought many of these risks onto their balance sheets certainly helped in this context. In addition, given that in a market-based financial system the value of assets can vary greatly, information needs to be provided on the extent of risk exposure under different states of the world. As a result, disclosures on banks' positions have become more comprehensive, more detailed and more timely. Much of this was actually already work in progress, as part of the implementation of Pillar 3 of the Basel II framework. To further improve the comparability of banks' disclosures, the Financial Stability Forum (FSF) has proposed that banks should use a standard template based on best practices in the industry. This can, in principle, be a useful instrument; however, care must be taken that this does not duplicate disclosures made under Pillar 3.

But the demand for greater transparency does not stop at the level of exposures. Rating agencies, investors, counterparties, depositors and supervisors will also require transparency on banks' risk management. All of these groups will rightly make the point that raw numbers alone do not provide a sufficient degree of certainty about a bank's risk situation. At least as important, if not more important, is a bank's ability to deal with risk. Consequently, banks will have to grant insights into their risk modelling, as well as the methodologies used and internal processes. This is a sensible development, as the crisis has underlined once again that it is not so much the absolute risk levels, but rather a bank's ability to control and manage risk that is relevant for its capacity to absorb risk. Again, fortunately, Pillar 3 already charted the necessary steps in this area, which means banks' recent steps have built on activities that were already underway.

Collectively, banks have also organised initiatives to improve transparency in specific market segments. Thus, for instance, European banks have launched an effort to increase transparency in securitisation markets. Another area where greater transparency will require banks' collective effort is in the distribution of risk within the financial system. In principle, the broader spreading of financial risk is a welcome development. However, as noted well before the outbreak of the subprime crisis, credit risk transfer can result in less transparency on who ultimately holds the risk. Knowledge of this is essential to enable both financial institutions and supervisors to correctly assess the likely transmission channels from one market segment to another and from one national banking system to another. Quite obviously, greater transparency on risk distribution is again one of those areas where only internationally coordinated efforts and joint actions by the official and private sectors will provide the required answers.

### *Valuation issues*

Another area to be addressed is valuation, especially that of complex financial products. The crisis has highlighted some deficiencies in current rules on accounting standards. Two issues stand out in particular: first, there is an intensive debate about the limits of fair value accounting. While there is still considerable agreement that fair value accounting provides the greatest transparency for investors, the crisis has put the spotlight on the valuation of financial instruments for which there is no liquid market. In times of scarce liquidity, the valuation of these instruments has to be based on internal models instead of observable market prices. Given that third parties cannot form an opinion on the accuracy of valuations based on such models as easily as for market-priced positions, this can raise uncertainty, especially in times

of stress. Second, the crisis has highlighted differences between accounting standards, chiefly between US GAAP and IFRS, leading to questions of comparability and competitive neutrality between financial institutions. Specifically, one of the areas that has been identified as requiring priority attention is the extent to which it is possible to reclassify assets between different accounting categories. Conceptually, the classification of a financial instrument, and consequently the respective accounting treatment, has to be determined upfront (i.e. at the initiation of the transaction) and must reflect the intention to either hold or trade the instrument. A reclassification of financial instruments, leading to a different impact on the profit and loss account, is virtually prohibited under IFRS, while there is more flexibility for this under US GAAP. Standard setters have wisely limited the options for reclassification here to avoid accounting arbitrage. Nonetheless, in a global financial market, there is a need for a uniform treatment of this issue under different accounting systems.

More fundamentally, the crisis has shown that accounting rules are not only important to give reassurance to investors and depositors, thereby reducing uncertainty in times of market stress, but they are also inseparably connected to financial stability. This has become particularly apparent in the procyclical effect of fair value accounting. Consequently, it is a welcome development that authorities, standard-setters and financial institutions are addressing this issue with a high priority.

#### *Risk management*

A third area where change is needed is risk management. In a whole range of aspects, the need for more rigorous risk discipline has been revealed in many institutions. Moreover, at a number of these banks, the crisis exposed a lack of risk discipline; risks were assumed that were not commensurate with the banks' risk absorption capacities in terms of earnings power and capital base. Similarly, risk discipline was lacking in that several banks and other financial institutions bought financial products with risk features they did not fully understand. Often, too, the dynamics between the different types of risk, such as credit and market risk, were only poorly understood.

Thus, the crisis serves as a useful reminder of the importance of a robust and pervasive risk management culture. This risk culture must be embedded in the way the firm operates; it must actually pervade all functions and business areas, rather than being merely defined as a control function. More specifically, the crisis has underlined the need for investors to carry out their own "due diligence" rather than relying blindly on the judgement of sellers or third parties, such as rating agencies. Ratings, it has been highlighted, must only be a complement for one's own risk assessment, they must not become a substitute for it. Risk management also requires a rigorous application of internal rules for the assumption and pricing of risk. It is top management's obligation to ensure that capital and liquidity are allocated to different business lines at prices that reflect the risk-adequate costs of capital, aligned to the objective of maintaining sustainable earnings models.

Pricing risk correctly depends on accurate price signals from the markets in which the underlying instruments are actually traded. Especially for new market segments as well as complex and non-standardised financial products, this can be a problem. The financial industry is therefore committed to improving price-finding mechanisms. Instruments to do so include the early definition of meaningful indices for new market segments and the pooling of price information on joint platforms (it should be noted that this does not necessarily imply that the trade is executed on a joint platform, too).

Using the right prices for valuing risk is important – and so is feeding these prices into models that are meaningful, up-to-date and appropriate for the business model pursued by the bank involved. Hence, there is a necessity to assess, on a regular basis, the adequacy and usefulness of risk models. Specifically, the assumptions underlying these risk models must be questioned and checked regularly. For instance, the assumption of continuously available market liquidity, which has been an implicit, underlying assumption of many risk models, may need to be re-evaluated in light of recent market events. Similarly, the time series, on which risk models are based, must be checked to assess whether they are sufficiently long and representative. Here, it is possible to argue that many risk models may have incorporated assumptions that were too optimistic because of the long, unusually stable and positive environment – with low default rates and low volatilities – which the global financial markets enjoyed before the outbreak of the crisis. Moreover, many models apparently did not give sufficient attention to “fat tail” events. Finally, portfolios must regularly be subjected to stress testing, designed to include “out-of-the-box” scenarios that go beyond model assumptions. More generally, at many banks, there was an over-reliance on poorly understood, complex statistical models. A too-mechanical application of risk models is unlikely to give a sufficient overview of the possible risk scenarios. Therefore, an appropriate mixture of quantitative and qualitative metrics is needed considering that no model, no matter how sophisticated, can adequately capture all the risks an institution may face.

#### *Market infrastructure*

Effective crisis prevention also requires efforts directed at improving a fourth area, i.e. market infrastructure. Apart from adequate price finding mechanisms, already mentioned above, this includes a settlement infrastructure that reduces risk to systemic stability. This should also comprise instruments such as netting arrangements and automated settlement platforms capable of handling large volumes (including transaction peaks in times of market stress), accurately and without delay. By way of example: industry efforts are currently focussing on improving the infrastructure for OTC derivatives trading with the aim of creating a central counterparty, which would reduce settlement risk enormously. Greater standardisation of financial products can be conducive to automation and lower settlement risk, but it is obvious that this comes at a price: less flexibility to create tailor-made financial solutions that correspond to individual clients’ financial needs.

#### *Rating agencies*

As a fifth area needing improvement, rating agencies are widely seen as partly culpable for the current market disruptions. To be fair, though, it must be pointed out that investors who suffered losses in highly complex financial instruments should first of all blame themselves for not having read the fine-print and for not having performed their own “due diligence” on their investments. Nonetheless, it is also legitimate to point out that the methodologies employed by rating agencies have been found wanting in connection with the assessment of the default probabilities of structured products. Rating agencies must also be blamed for not devoting sufficient resources to evaluating these assets. It is, therefore, justified that rating agencies are now being subjected to closer regulatory scrutiny and are being asked to enhance the transparency of the information on their rating methodologies, as this will enable investors to make their own informed judgements. An external review of rating agency processes against agreed standards is essential for the credibility and reliability of ratings. Rating agencies will also be asked to address possible conflicts of interest, for example, when a rating agency is closely involved in the structuring of securitisations.

#### *Liquidity management*

The dramatic drying-up of the inter-bank markets highlighted the crucial importance of improving liquidity risk management, a sixth area requiring attention. The subprime crisis has driven home the recognition that liquidity is a far more important issue in our capital-based financial system, which has developed over recent years as a result of disintermediation and credit risk transfer, than it is in a purely bank-based financial system. Banks' liquidity management as well as the tools available to authorities to deal with crises in such a system must therefore be attuned to the new environment.

Improving liquidity management must include rigorous and effective stress testing and strict internal pricing discipline. The recognition that some problems could have been avoided had Basel II rules on capital requirements for short-term contingent credit lines already been in place certainly underlined the importance of the appropriate incentives in pricing (contingent) risk. More generally, consequences will have to be drawn from the failure of some banks to prepare adequately for the contingent liabilities in connection with off-balance-sheet vehicles.

It is fortunate that liquidity risk management had already been on the radar of both banks and supervisors well before the crisis. As a result, efforts in this field of action were able to build on a substantial amount of previous work. This includes the Principles for Liquidity Management published by the IIF in spring 2007; it is widely understood that, had those principles been implemented by all financial institutions before the crisis, the impact of the crisis may have been smaller. Similarly, supervisors on both the Basel Committee and the Committee of European Banking Supervisors (CEBS) had already been working on an update of the rules on liquidity regulation, which has meanwhile been published for consultation. The recommendations centre on stress testing, contingency planning for times of reduced liquidity and the need for liquidity buffers. Going forward, it will be important to make sure that the new rules take into account the insights gained during the ongoing crisis, but that they also provide the flexibility needed to take into account the specific requirements of individual financial institutions. One way of doing so would be to allow the use of bank-specific internal liquidity models as the basis for liquidity requirements (similarly to the use of internal risk models for the calculation of capital requirements under Basel II). Such an approach is currently being implemented in Germany, and may well prove to be a useful role model.

Incidentally, when thinking about improvements to banks' liquidity risk management, it is obvious that any measures taken should be aligned to central banks' actions to change their approaches to their liquidity facilities.

### **Measures taken by central banks**

The current crisis has once again underlined the importance of flexible emergency liquidity operations. In an effort to calm markets and prevent a spillover of financial market turmoil into the real economy, central banks injected substantial amounts of liquidity into the financial system. The professional and timely action by central banks certainly had a calming effect on financial markets. However, even this initial action by central banks was not able to prevent returned uncertainty in the fourth quarter of 2007, resulting partly from the disclosure of further unexpected losses and partly from growing concerns about the impact on the real economy. In addition, efforts by banks to hold on to their available liquidity choked volumes in money markets. This was accompanied by uncertainty when markets would reopen so that assets could again be securitised and funds raised. Moreover, it became obvious in late 2007 that there was a problem for several banks with currency mismatches on their balance sheets; in particular, European banks had a need to raise dollar funding. In December 2007, central banks reacted to this by agreeing to establish swap facilities between them. This concerted action by several central banks, accompanied by additional liquidity provisioning, was an

important signal to economic actors and helped stabilise markets. Building on this experience, the FSF report rightly calls on central banks to intensify their cooperation and assess whether the arrangements put in place towards the end of 2007 can be instituted on a permanent basis to make it easier to mobilise liquidity quickly across borders.

The central banks also widened the range of facilities as well as the range of collateral eligible for monetary policy operations. In this context, it is noteworthy that the ECB did not have to do so, as it already had a very extensive arsenal of instruments at its disposal. Along with the alignment in instruments, tools and facilities available, another sort of alignment took place: in the strategies for the provisioning of emergency liquidity. While some central banks initially pursued more restrictive strategies, which arguably added to uncertainty in the markets as the crisis unfolded, central banks now seem to share a common view.

Central banks' reputation has increased considerably following their professional and targeted actions aimed at dealing with the repercussions of the crisis. It is also worth noting that the international collaboration between central banks functioned rather well – which proved to be immensely important considering the global nature of the crisis. Nevertheless, going forward, central banks, too, are faced with difficult challenges.

- First, there is a need for central banks to find the right balance between the objectives of maintaining price stability and financial stability. It is somewhat unfortunate that the financial crisis coincides with a period of rising inflation, which forces central banks to ensure that inflationary expectations do not become entrenched. Of course, it is important to note that the emergency liquidity central banks provided has not increased the money supply overall and that, therefore, the operations per se did not have an inflationary effect. However, central banks may come into a dilemma should it be necessary to raise interest rates to forestall an increase in inflationary expectations when, at the same time, such a rise in interest rates could rekindle uncertainty in the financial markets.
- Second, while large scale liquidity operations and an expansion of the range of collateral were necessary and adequate responses to the disruptions in money markets and other financial market segments, it must be clear that these are to remain exceptional facilities. Similarly, central banks have legitimate concerns that a deterioration in the quality of collateral could occur (which, ultimately would create moral hazard and put taxpayers at risk) and that banks could become overly dependent on refinancing via central banks rather than through the markets. Hence, as soon as when financial markets stabilise, central banks will have to make it clear (as, indeed, they have already indicated at least verbally) that banks will be expected to return to refinancing through the markets.

### **Strategic consequences for the financial industry**

By now it has become obvious that, once the crisis is over, there will not be a simple return to the status quo ante, but that there will be consequences for the business models of banks. In some cases this will be limited to minor adjustments, in others this will entail a more fundamental overhaul. One consequence is generally recognised as being crucially important; old fashioned virtues of the banking industry such as a meticulous examination of borrowers' ability to repay their loans and a thorough evaluation of securities offered for investment, will make a strong comeback.

The crisis has also served as a salutary reminder that management has an obligation to develop a business model which generates a sustainable income stream. This does not rule out taking advantage of short-term business opportunities; nor does it rule out entering new business lines which promise a future earnings stream in a continuously changing financial market. But it is problematic if the majority of earnings is generated from activities that are

only viable under favourable market conditions and entail disproportionate risk levels – as was the case at some banks that subsequently experienced difficulties.

*“Originate & distribute“ model remains intact as there are good reasons to support it*

In reaction to the crisis, much has been said about the “originate and distribute” model. Some have even argued that the model is fatally flawed and the future of the banking business is in a return to basics, i.e. old fashioned on-balance sheet intermediation and bank-based financial systems. However, even if there is a need to modify the “originate and distribute” model based on the lessons learned from the subprime crisis, it should be obvious that the benefits of the “originate and distribute” model are so great for banks, clients and investors alike that it will actually prevail. Put more bluntly: there is no way back to “the good old days of on-balance sheet business” – simply because these old days were far from good: on-balance sheet intermediation leads to greater risk concentrations as well as less flexible risk and capital management.

In contrast, originate and distribute, if performed wisely, reduces concentration and makes banks more stable. The active management of risk, liquidity and capital smoothes a bank’s earnings and profits profile and allows banks as well as investors who invest in securitised assets to optimise their risk-return profiles. But there are also benefits beyond the banks themselves: capital is allocated more efficiently within the economy, as credit risk becomes tradeable and is priced on a continuous, transparent basis. Credit risk transfer within the economy also increases the total volume of credit available, as banks create scope to underwrite new business by securitising part of their exposures.

Does this mean that no change is necessary at all? Plainly the answer is no. Securitisations alter the incentive structure for all parties involved. It is also undeniable that there is evidence that originators of US mortgage-related securitisations displayed a lack of due diligence in assessing the risk of the packaged mortgages – as did investors in these securities. Hence, the subprime crisis has shown that, when credit risk is being transferred, there must be sufficient incentives for originators to assess and monitor credit risk properly and for investors to evaluate the risks they take.

However, if this resulted in restricting the market for securitisations overall, this would amount to throwing out the baby with the bathwater. While it is undoubtedly necessary that the incentives at all stages of a securitisation transaction must be set correctly, so as not to endanger systemic stability or disadvantage one party to the transaction, it is also clear that this can be done by a number of different mechanisms. No less important, it must be recognised that securitisations differ widely, depending on the underlying and on the originator. Hence, a one-size-fits-all approach to dealing with the potential problems of securitisation is not called for. In particular, it would be counterproductive if originators were forced always to hold on to the first-loss tranche. If this were the case, a transfer of risk would not take place and securitisation would be reduced to an instrument that would only be useful for funding and, under Basel II rules to a minor extent, capital arbitrage.

It is, therefore, welcome that the proposals contained in the IIF and FSF reports take another approach towards addressing the problems. They focus on some modifications (i.e. increases) to the capital requirements for investments in securitised assets, but there is also an emphasis on a substantial increase in transparency in securitisation, in particular regarding the quality of underlying transactions, the portion of risk retained by the originator (if at all) and the methodology used for rating an issue. This will enable investors to improve their due diligence and to fully assess the risk connected to any transaction. In fact, one could say

current market developments confirm that this is the right approach; issuance volumes of simple, transparent, high quality securitisation structures have held up far better than those of complex transactions, such as CDO<sup>2</sup>. (Incidentally, the same holds true for other asset classes.)

#### *Funding structure*

The unprecedented drying up of liquidity in interbank, long-term securities and securitisation markets has underlined the importance of a reliable, diversified and stable funding base. Business models built on the assumption of continuously available funding in narrow market segments have clearly been found wanting. In contrast, a robust deposit base combined with a funding structure that avoids significant currency and maturity mismatches has proven to be beneficial for the stability of financial institutions.

In addition, attention will turn to a financial institution's capital base for essentially two reasons: first, the strains on many banks' balance sheets have focused attention on the leverage of individual banks. In fact, many banks have already started to de-leverage in order to relieve funding pressures and to reduce risk. Second, while the best defence against risk is strong earnings power that provides a cushion against losses, a bank's capital base remains (apart from being important for other reasons) the ultimate absorber of losses, of course. Incidentally, a bank's actions to increase its capital base correspond to financial regulators' intentions to increase capital buffers in the system. While it is undeniable that an increase in capital requirements may be justified for some asset classes (such as complex structured products, as mentioned above), caution should be applied when thinking about higher capital requirements: on the one hand, it should be acknowledged that higher capital buffers are an inadequate answer to the kind of problem experienced in recent months – i.e. a liquidity crisis. As liquidity crises are more likely than solvency crises in a market-based financial system, better liquidity management rather than higher capital buffers is likely to provide the right answer. On the other hand, too onerous capital requirements will only push more activities to unregulated parts of the financial system.

#### *Geographic and segment coverage*

Finally, banks will try to spread their risk better across markets and business segments. It is certainly no coincidence that banks with a greater geographic footprint and a more diversified business spectrum fared far better than those without. Indeed, it is probably one of the most striking features of the subprime crisis that this has been – at least up until now – almost entirely a problem for the established financial markets in North America and Western Europe, whereas there was hardly any negative impact on banks and banking systems in emerging markets.

#### **Conclusion**

The subprime crisis confronts banks as much as regulators and central banks with significant challenges. The market turmoil has made clear how complex and how quick the transmission mechanisms are in a market-based, global financial system. The crisis has shown that securitisations and the globalisation of our markets has created institutions (such as Bear Stearns) that are too interconnected to fail. With this, the truth has been brought home that isolated action is not an option, but rather that a close coordination is needed among banks as well as governments – and of course between the private and official sectors.

Given the scale and scope of the current disruptions in financial markets, it is undoubtedly appropriate that responses be found in a timely manner to the identified problems. However, it is still correct to remind ourselves that consequences should only be drawn after doing a

thorough impact assessment of potential measures. This is warranted not just because of the by now well-established “better regulation” principle, but also and even more so because of the danger of unintended consequences. Time and again, in the past, it has been the case that hasty, ill thought-out, too restrictive regulation has sown the seeds of the next crisis.

Against this background, it is all the more welcome that all actors involved – the financial industry, standard-setters, regulators, governments and central banks – have emphasised that any reaction (i) must be coordinated internationally and (ii) should be based on a close dialogue between the parties involved. It is encouraging that the actions taken so far have indeed followed these principles; the close international cooperation within the Financial Stability Forum is an example for this and so is the dialogue between the Institute of International Finance and the authorities.

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